Field Review of the Draft K-12 Grade Span Expectations (GSEs) in Science

Rhode Island Grade Span Expectations K-12 in Science Review – Grade Span K-4

Please Note:
Field Review input needs to be returned to RIDE by Thursday, December 1, 2005.

Please return completed information to:

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RI Department of Education
Office of Instruction
255 Westminster Street
Providence, RI 02903
FAX: 401-222-6033
Pat.Kozaczka@ride.ri.gov

NOTE: You may submit a compilation of comments by attachment electronically to Peter McLaren at peter.mclaren@ride.ri.gov

Any questions regarding Field Review process may be directed to Peter McLaren (Peter.McLaren@ride.ri.gov) at 222-8454 or Linda A. Jzyk (Linda.Jzyk@ride.ri.gov) at 222-8473.

Field Review of the Draft K-12 Grade Span Expectations (GSEs) in Science

Directions:

1) Begin the review process using the field review packet that most closely aligns with the grade level(s) in which you are most familiar. There are three review packets based upon the grade spans that will be used for large-scale assessment (K-4, 5-8, & high school).

2) Complete the Reviewer Information form found on page 2.

3) Read in the GSE packet "*About the Draft Rhode Island K-12 Grade Span Expectations in Science:* to understand how the draft science GSEs were developed and to familiarize yourself with the format of the document and the relationships between the Statements of Enduring Knowledge (EK), the state Assessment Targets, the Unifying Themes, the cross-grade span Stems and the GSEs.

4) Review **Appendix A: GSE Development in Science** for greater understanding of the nature of the science GSEs including the criteria for their design.

5) Read the following questions which form the basis for this field review document:

   Question 1*: Is the GSE articulated in a way that it is clear what is expected of classroom instruction/curriculum and state assessment?*

   Question 2: *Are the differences between the GSEs of adjacent grade spans clear? They should show the appropriate developmental growth as they progress K - high school.*

   Question 3: *Is the GSE more rigorous, similar to, or less rigorous than what is presently expected in your school's science program at that grade span?*

   Question 4: *Does the set of GSEs within each Statement of Enduring Knowledge have the potential to promote coherent instruction? First, is each individual GSE coherent with the Statement of Enduring Knowledge under which it is listed? Second, as a whole, do these GSEs articulate well-balanced coverage of the major concepts within the EK statement? How could they be improved?*

   Question 5: *What science content (important concepts) is missing in these draft science GSEs? Where are there gaps in content? This information is most essential for developing the science GSEs for local curriculum, instruction and assessment.*

6) Locate the grade span you are reviewing in the GSE document. Notice that the GSEs listed in the review packet are detailed, in order, by domain, then by Statement of Enduring Knowledge, and finally by the corresponding assessment target. To help specify the GSE on the review packet the initial portion of the GSE, as listed in the GSE document, has been written next to the GSE number in the review packet.

7) Work through questions 1, 2, and 3 for each GSE within that grade span. Then answer question 4 about the set of GSEs within the Statements of Enduring Knowledge. Notice there is a place to code a response to each question and a place to provide comments.

Rhode Island K-12 Grade Span Expectations in Science – Field Review
Reviewer Information

Name _____

District/Organization: _____

School _____ **or Other** _____

Position: _____

Grade level and or course(s) you are teaching

_____

_____

Number of years in that position _____

Certification(s) _____ _____

_____ _____

E-mail Address: _____

Science Curriculum/textbook used for instruction

_____

Participation on other district and statewide teams (e.g. Science GSE development team, district curriculum committee, school improvement team, peer review team

_____

_____

_____

Question # 1: Clarity of GSE

Is the GSE articulated in a way that it is clear what is expected of classroom instruction/curriculum and state assessment? (Do I understand what learning will be assessed on the state assessment and the related curricular and/or instructional aspects?) If not, what aspect of the GLE needs further clarification? (E.g. clarify terminology, give examples, etc.)

LS1 - All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).

LS1 (K-4) - INQ+POC –1 Sort/classify different living things using similar and different characteristics. Describe why organisms belong to each group or cite evidence about how they are alike or not alike.

GSEs	Curriculum/ Instruction	State Assessment
LS1 (K-2) –1a distinguishing between...	○	○
LS1 (K-2) –1b identifying and sorting...	○	○
LS1 (K-2) – lc observing and recording the...	○	○
LS1 (3-4) –1a citing evidence to distinguish...	○	○
LS1 (3-4) –1b identifying, sorting and...	○	○
LS1 (3-4) –1c recording and analyzing...	○	○
LS1 (3-4) –1d citing evidence (e.g., prior...	○	○

Comments

LS1 (K-4) SAE –2 Identify the basic needs of plants and animals in order to stay alive. (i.e., water, air, food, space)

GSEs	Curriculum/ Instruction	State Assessment
LS1 (K-2)-2a observing that plants need…	○	○
LS1 (3-4)-2a observing that plants need…	○	○

Comments

LS1 (K-4) POC –3 Predict, sequence or compare the life stages of organisms – plants and animals (e.g., put images of life stages of an organism in order, predict the next stage in sequence, compare two organisms).

GSEs	Curriculum/ Instruction	State Assessment
LS1 (K-2)– 3a observing and scientifically…	○	○
LS1 (K-2)– 3b sequencing the life cycle of a…	○	○
LS1 (3-4)– 3a oobserving changes and recording…	○	○
LS1 (3-4)– 3b sequencing the life cycle of…	○	○
LS1 (3-4)– 3c comparing the life cycles of…	○	○

Comments

LS1 (K-4) FAF –4 Identify and explain how the physical structures of an organism (plants or animals) allow it to survive in its habitat/environment (e.g., roots for water; nose to smell fire.

GSEs	Curriculum/ Instruction	State Assessment
LS1 (K-2)– 4a identifying the specific functions…	○	○
LS1 (3-4)– 4a identifying and explaining how…	○	○
LS1 (3-4)–4b analyzing the structures needed…	○	○

LS2 - Matter cycles and energy flows through an ecosystem.

Comments

LS2 (K-4) SAE –5 Recognize that energy is needed for all organisms to stay alive and grow or identify where a plant or animal gets its energy.

GSEs	Curriculum/ Instruction	State Assessment
LS2 (K-2)–5a caring for plants and/or animals	○	○
LS2 (3-4) –5a identifying source of energy	○	○

Comments

LS2 (K-4) SAE –6 Describe ways plants and animals depend on each other (e.g., shelter, nesting, food).

GSEs	Curriculum/ Instruction	State Assessment
LS2 (K-2)– 6a acting out or constructing simple…	○	○
LS2 (K-2)–6b using information about a simple…	○	○
LS2 (3-4)– 6a demonstrating in a food web…	○	○
LS2 (3-4)– 6b using information about….	○	○

Question # 1: Clarity of GSE

Is the GSE articulated in a way that it is clear what is expected of classroom instruction/curriculum and state assessment? (Do I understand what learning will be assessed on the state assessment and the related curricular and/or instructional aspects?) If not, what aspect of the GLE needs further clarification? (E.g. clarify terminology, give examples, etc.)

LS3 - Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).

LS3 (K-4) SAE –7 Using information (data or scenario), explain how changes in the environment can cause organisms to respond (e.g., survive there and reproduce, move away, die).			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
LS3 (3-4) –7a explaining what plants or animals…	○	○	
LS3 (3-4) –7b explaining the balance of the…	○	○	

LS 4 - Humans are similar to other species in many ways, and yet are unique among Earth's life forms.

LS4 (K-4) FAF –8 Identify what the physical structures of humans do (e.g., sense organs – eyes, ears, skin, etc.) or compare physical structures of humans to similar structures of animals			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
LS4 (K-2)-8a identifying the five senses and …	○	○	
LS4 (K-2)-8b observing, identifying, and…	○	○	
LS4 (K-2)-8c identifying the senses needed to …	○	○	
LS4 (3-4)-8a showing connections between…	○	○	
LS4 (3-4)-8b comparing and analyzing external….	○	○	

LS4 (K-4) POC -9 Distinguish between characteristics of humans that are inherited from parents (i.e., hair color, height, skin color, eye color) and others that are learned (e.g., riding a bike, singing a song, playing a game, reading)			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
LS4 (K-2) –9a observing and comparing their….	○	○	
LS4 (K-2) –9b identifying that some behaviors…	○	○	
LS4 (3-4) –9a identifying similarities that are…	○	○	
LS4 (3-4) –9b identifying that some behaviors…	○	○	

Question # 2: Clarity of Grade Span Differences
Are the differences between the GSEs of adjacent grade spans clear? They should show the appropriate developmental growth as they progress K - high school.
NOTE: In some cases, no differences are articulated between the adjacent (corresponding) GSEs. This may be due to increasing difficulty in some related GSE.

LS1 - All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).

LS1 (K-4) - INQ+POC –1 Sort/classify different living things using similar and different characteristics. Describe why organisms belong to each group or cite evidence about how they are alike or not alike.

GSEs	Differences are clear	Differences not clear
LS1 (K-2) –1a distinguishing between...	○	○
LS1 (K-2) –1b identifying and sorting...	○	○
LS1 (K-2) – lc observing and recording the...	○	○
LS1 (3-4) –1a citing evidence to distinguish...	○	○
LS1 (3-4) –1b identifying, sorting and...	○	○
LS1 (3-4) –1c recording and analyzing...	○	○
LS1 (3-4) –1d citing evidence (e.g., prior...	○	○

Comments

LS1 (K-4) SAE –2 Identify the basic needs of plants and animals in order to stay alive. (i.e., water, air, food, space).

GSEs	Differences are clear	Differences not clear
LS1 (K-2)-2a observing that plants need…	○	○
LS1 (3-4)-2a observing that plants need…	○	○

Comments

LS1 (K-4) POC –3 Predict, sequence or compare the life stages of organisms – plants and animals (e.g., put images of life stages of an organism in order, predict the next stage in sequence, compare two organisms).

GSEs	Differences are clear	Differences not clear
LS1 (K-2)– 3a observing and scientifically…	○	○
LS1 (K-2)– 3b sequencing the life cycle of a…	○	○
LS1 (3-4)– 3a observing changes and recording…	○	○
LS1 (3-4)– 3b sequencing the life cycle of…	○	○
LS1 (3-4)– 3c comparing the life cycles of…	○	○

Comments

LS1 (K-4) FAF –4 Identify and explain how the physical structures of an organism (plants or animals) allow it to survive in its habitat/environment (e.g., roots for water; nose to smell fire.)

GSEs	Differences are clear	Differences not clear
LS1 (K-2)– 4a identifying the specific functions…	○	○
LS1 (3-4)– 4a identifying and explaining how…	○	○
LS1 (3-4)–4b analyzing the structures needed…	○	○

Comments

Question # 2: Clarity of Grade Span Differences
Are the differences between the GSEs of adjacent grade spans clear? They should show the appropriate developmental growth as they progress K - high school.
NOTE: In some cases, no differences are articulated between the adjacent (corresponding) GSEs. This may be due to increasing difficulty in some related GSE.

LS2 - Matter cycles and energy flows through an ecosystem.

LS2 (K-4) SAE –5 Recognize that energy is needed for all organisms to stay alive and grow or identify where a plant or animal gets its energy.

GSEs	Differences are clear	Differences not clear
LS2 (K-2)–5a caring for plants and/or animals	○	○
LS2 (3-4) –5a identifying source of energy	○	○

Comments

LS2 (K-4) SAE –6 Describe ways plants and animals depend on each other (e.g., shelter, nesting, food).

GSEs	Differences are clear	Differences not clear
LS2 (K-2)– 6a acting out or constructing simple…	○	○
LS2 (K-2)–6b using information about a simple…	○	○
LS2 (3-4)– 6a demonstrating in a food web…	○	○
LS2 (3-4)– 6b using information about….	○	○

Comments

LS3 - Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).

LS3 (K-4) SAE –7 Using information (data or scenario), explain how changes in the environment can cause organisms to respond (e.g., survive there and reproduce, move away, die).

GSEs	Differences are clear	Differences not clear
LS3 (3-4) –7a explaining what plants or animals…	○	○
LS3 (3-4) –7b explaining the balance of the…	○	○

Comments

LS 4 - Humans are similar to other species in many ways, and yet are unique among Earth's life forms.

LS4 (K-4) FAF –8 Identify what the physical structures of humans do (e.g., sense organs – eyes, ears, skin, etc.) or compare physical structures of humans to similar structures of animals.

GSEs	Differences are clear	Differences not clear
LS4 (K-2)-8a identifying the five senses and …	○	○
LS4 (K-2)-8b observing, identifying, and…	○	○
LS4 (K-2)-8c identifying the senses needed to …	○	○
LS4 (3-4)-8a showing connections between…	○	○
LS4 (3-4)-8b comparing and analyzing external….	○	○

Comments

LS4 (K-4) POC -9 Distinguish between characteristics of humans that are inherited from parents (i.e., hair color, height, skin color, eye color) and others that are learned (e.g., riding a bike, singing a song, playing a game, reading).

GSEs	Differences are clear	Differences not clear
LS4 (K-2) –9a observing and comparing their….	○	○
LS4 (K-2) –9b identifying that some behaviors…	○	○
LS4 (3-4) –9a identifying similarities that are…	○	○
LS4 (3-4) –9b identifying that some behaviors…	○	○

Comments

Question 3: Expected Rigor
Is the GSE more rigorous, similar to, or less rigorous than what is presently expected in your school's science program at that grade span?

LS1 - All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).

LS1 (K-4) - INQ+POC –1 Sort/classify different living things using similar and different characteristics. Describe why organisms belong to each group or cite evidence about how they are alike or not alike.

GSEs	More Rigorous	As Rigorous	Less Rigorous
LS1 (K-2) –1a distinguishing between...	○	○	○
LS1 (K-2) –1b identifying and sorting...	○	○	○
LS1 (K-2) – lc observing and recording the...	○	○	○
LS1 (3-4) –1a citing evidence to distinguish...	○	○	○
LS1 (3-4) –1b identifying, sorting and...	○	○	○
LS1 (3-4) –1c recording and analyzing...	○	○	○
LS1 (3-4) –1d citing evidence (e.g., prior...	○	○	○

Comments

LS1 (K-4) SAE –2 Identify the basic needs of plants and animals in order to stay alive. (i.e., water, air, food, space.)

GSEs	More Rigorous	As Rigorous	Less Rigorous
LS1 (K-2)-2a observing that plants need…	○	○	○
LS1 (3-4)-2a observing that plants need…	○	○	○

Comments

LS1 (K-4) POC –3 Predict, sequence or compare the life stages of organisms – plants and animals (e.g., put images of life stages of an organism in order, predict the next stage in sequence, compare two organisms)

GSEs	More Rigorous	As Rigorous	Less Rigorous
LS1 (K-2)– 3a observing and scientifically…	○	○	○
LS1 (K-2)– 3bsequencing the life cycle of a…	○	○	○
LS1 (3-4)– 3a observing changes and recording…	○	○	○
LS1 (3-4)– 3b sequencing the life cycle of…	○	○	○
LS1 (3-4)– 3c comparing the life cycles of…	○	○	○

Comments

LS1 (K-4) FAF –4 Identify and explain how the physical structures of an organism (plants or animals) allow it to survive in its habitat/environment (e.g., roots for water; nose to smell fire).

GSEs	More Rigorous	As Rigorous	Less Rigorous
LS1 (K-2)– 4a identifying the specific functions…	○	○	○
LS1 (3-4)– 4a identifying and explaining how…	○	○	○
LS1 (3-4)–4b analyzing the structures needed…	○	○	○

LS2 - Matter cycles and energy flows through an ecosystem.

LS2 (K-4) SAE –5 Recognize that energy is needed for all organisms to stay alive and grow or identify where a plant or animal gets its energy.

GSEs	More Rigorous	As Rigorous	Less Rigorous
LS2 (K-2)–5a caring for plants and/or animals	○	○	○
LS2 (3-4) –5a identifying source of energy	○	○	○

Comments

LS2 (K-4) SAE –6 Describe ways plants and animals depend on each other (e.g., shelter. nestina. food)

GSEs	More Rigorous	As Rigorous	Less Rigorous
LS2 (K-2)– 6a acting out or constructing simple…	○	○	○
LS2 (K-2)–6b using information about a simple…	○	○	○
LS2 (3-4)– 6a demonstrating in a food web…	○	○	○
LS2 (3-4)– 6b using information about….	○	○	○

Comments

Question 3: Expected Rigor

Is the GSE more rigorous, similar to, or less rigorous than what is presently expected in your school's science program at that grade span?

LS3 - Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).

LS3 (K-4) SAE –7 Using information (data or scenario), explain how changes in the environment can cause organisms to respond (e.g., survive there and reproduce, move away, die).

GSEs	More Rigorous	As Rigorous	Less Rigorous
LS3 (3-4) –7a explaining what plants or animals…	○	○	○
LS3 (3-4) –7b explaining the balance of the…	○	○	○

Comments

LS 4 - Humans are similar to other species in many ways, and yet are unique among Earth's life forms.

LS4 (K-4) FAF –8 Identify what the physical structures of humans do (e.g., sense organs – eyes, ears, skin, etc.) or compare physical structures of humans to similar structures of animals.

GSEs	More Rigorous	As Rigorous	Less Rigorous
LS4 (K-2)-8a identifying the five senses and …	○	○	○
LS4 (K-2)-8b observing, identifying, and…	○	○	○
LS4 (K-2)-8c identifying the senses needed to …	○	○	○
LS4 (3-4)-8a showing connections between…	○	○	○
LS4 (3-4)-8b comparing and analyzing external….	○	○	○

Comments

LS4 (K-4) POC -9 Distinguish between characteristics of humans that are inherited from parents (i.e., hair color, height, skin color, eye color) and others that are learned (e.g., riding a bike, singing a song, playing a game, reading)

GSEs	More Rigorous	As Rigorous	Less Rigorous
LS4 (K-2) –9a observing and comparing their….	○	○	○
LS4 (K-2) –9b identifying that some behaviors…	○	○	○
LS4 (3-4) –9a identifying similarities that are…	○	○	○
LS4 (3-4) –9b identifying that some behaviors…	○	○	○

Comments

Question # 4: Does the set of GSEs within each Statement of Enduring Knowledge have the potential to promote coherent instruction? First, is each individual GSE coherent with the Statement of Enduring Knowledge under which it is listed? Second, as a whole, do these GSEs articulate well-balanced coverage of the major concepts within the EK statement? How could they be improved?

Go back and review ALL the GSEs *within* the Statement of Enduring Knowledge looking at them as a "GSE set**."** Does the set of GSEs *within* this Statement of Enduring Knowledge have the potential to promote coherent instruction?

LS1 - All living organisms have identifiable structures and characteristics that allow for survival (organisms, populations, & species).

GSEs for this EK Statement coherent as a set	
Yes o	**No** o

LS1 (K-4) - INQ+POC –1 Sort/classify different living things using similar and different characteristics. Describe why organisms belong to each group or cite evidence about how they are alike or not alike.

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes`	**No**
LS1 (K-2) –1a distinguishing between...	○	○
LS1 (K-2) –1b identifying and sorting...	○	○
LS1 (K-2) – lc observing and recording the...	○	○
LS1 (3-4) –1a citing evidence to distinguish...	○	○
LS1 (3-4) –1b identifying, sorting and...	○	○
LS1 (3-4) –1c recording and analyzing...	○	○
LS1 (3-4) –1d citing evidence (e.g., prior...	○	○

Comments

LS1 (K-4) SAE –2 Identify the basic needs of plants and animals in order to stay alive. (i.e., water, air, food, space).

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes`	**No**
LS1 (K-2)-2a observing that plants need…	○	○
LS1 (3-4)-2a observing that plants need…	○	○

Comments

LS1 (K-4) POC –3 Predict, sequence or compare the life stages of organisms – plants and animals (e.g., put images of life stages of an organism in order, predict the next stage in sequence, compare two organisms)

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes`	**No**
LS1 (K-2)– 3a observing and scientifically…	○	○
LS1 (K-2)– 3b sequencing the life cycle of a…	○	○
LS1 (3-4)– 3a observing changes and recording…	○	○
LS1 (3-4)– 3b sequencing the life cycle of…	○	○
LS1 (3-4)– 3c comparing the life cycles of…	○	○

Comments

LS1 (K-4) FAF –4 Identify and explain how the physical structures of an organism (plants or animals) allow it to survive in its habitat/environment (e.g., roots for water; nose to smell fire)

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes`	**No**
LS1 (K-2)– 4a identifying the specific functions…	○	○
LS1 (3-4)– 4a identifying and explaining how…	○	○
LS1 (3-4)–4b analyzing the structures needed…	○	○

Question # 4: Does the set of GSEs within each Statement of Enduring Knowledge have the potential to promote coherent instruction? First, is each individual GSE coherent with the Statement of Enduring Knowledge under which it is listed? Second, as a whole, do these GSEs articulate well-balanced coverage of the major concepts within the EK statement? How could they be improved?

Go back and review ALL the GSEs *within* the Statement of Enduring Knowledge looking at them as a "GSE set**."** Does the set of GSEs *within* this Statement of Enduring Knowledge have the potential to promote coherent instruction?

LS2 - Matter cycles and energy flows through an ecosystem.

GSEs for this EK Statement coherent as a set	
Yes ○	**No** ○

LS2 (K-4) SAE –5 Recognize that energy is needed for all organisms to stay alive and grow or identify where a plant or animal gets its energy.

Comments

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
LS2 (K-2)–5a caring for plants and/or animals	○	○
LS2 (3-4) –5a identifying source of energy	○	○

LS2 (K-4) SAE –6 Describe ways plants and animals depend on each other (e.g., shelter, nesting, food.)

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes`	**No**
LS2 (K-2)– 6a acting out or constructing simple…	○	○
LS2 (K-2)–6b using information about a simple…	○	○
LS2 (3-4)– 6a demonstrating in a food web…	○	○
LS2 (3-4)– 6b using information about….	○	○

LS3 - Groups of organisms show evidence of change over time (structures, behaviors, and biochemistry).

GSEs for this EK Statement coherent as a set	
Yes ○	**No** ○

LS3 (K-4) SAE –7 Using information (data or scenario), explain how changes in the environment can cause organisms to respond (e.g., survive there and reproduce, move away, die).

Comments

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes`	**No**
LS3 (3-4) –7a explaining what plants or animals…	○	○
LS3 (3-4) –7b explaining the balance of the…	○	○

LS - 4 Humans are similar to other species in many ways, and yet are unique among Earth's life forms.

GSEs for this EK Statement coherent as a set	
Yes ○	**No** ○

LS4 (K-4) FAF –8 Identify what the physical structures of humans do (e.g., sense organs – eyes, ears, skin, etc.) or compare physical structures of humans to similar structures of animals.

Comments

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes`	**No**
LS4 (K-2)-8a identifying the five senses and …	○	○
LS4 (K-2)-8b observing, identifying, and…	○	○
LS4 (K-2)-8c identifying the senses needed to …	○	○
LS4 (3-4)-8a showing connections between…	○	○
LS4 (3-4)-8b comparing and analyzing external….	○	○

LS4 (K-4) POC -9 Distinguish between characteristics of humans that are inherited from parents (i.e., hair color, height, skin color, eye color) and others that are learned (e.g., riding a bike, singing a song, playing a game, reading)

Comments

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes`	**No**
LS4 (K-2) –9a observing and comparing their….	○	○
LS4 (K-2) –9b identifying that some behaviors…	○	○
LS4 (3-4) –9a identifying similarities that are…	○	○
LS4 (3-4) –9b identifying that some behaviors…	○	○

Question # 1: Clarity of GSE

Is the GSE articulated in a way that it is clear what is expected of classroom instruction/curriculum and state assessment? (Do I understand what learning will be assessed on the state assessment and the related curricular and/or instructional aspects?) If not, what aspect of the GLE needs further clarification? (E.g. clarify terminology, give examples, etc.)

PS1 - All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size or amount of substance).

PS1 (K-4) INQ –1 Collect and organize data about physical properties in order to classify objects or draw conclusions about objects and their characteristic properties (e.g., temperature, color, size, shape, weight, texture, flexibility).

Comments

GSEs	Curriculum/ Instruction	State Assessment
PS1 (K-2)-1a identifying, comparing, and...	○	○
PS1 (K-2)-1b recording observations/data...	○	○
PS1 (K-2)-1c using attributes of properties...	○	○
PS1 (3-4)-1a identifying, comparing, and...	○	○
PS1 (3-4)-1b recording and analyzing...	○	○
PS1 (3-4)-1c citing evidence (e.g., prior ...	○	○
PS1 (3-4)-1d observing physical changes...	○	○

PS1 (K-4) POC –2 Make a prediction about what might happen to the state of common materials when heated or cooled or categorize materials as solid, liquid, or gas.

Comments

GSEs	Curriculum/ Instruction	State Assessment
PS1 (K-2)-2a describing properties of solids...	○	○
PS1 (K-2)-2b identifying and comparing....	○	○
PS1 (K-2)-2c making logical predictions...	○	○
PS1 (3-4)-3a measuring the weight of objects...	○	○
PS1 (3-4)-3b using measures of weight to...	○	○
PS1 (3-4)-3c showing that the weight of an...	○	○

PS1 (K-4) SAE –3 Use measures of weight (data) to demonstrate that the whole equals the sum of its parts.

Comments

GSEs	Curriculum/ Instruction	State Assessment
PS1 (K-2)-3a exploring the concept of weight...	○	○
PS1 (3-4)-3a measuring the weight of objects...	○	○
PS1 (3-4)-3b using measures of weight to...	○	○
PS1 (3-4)-3c showing that the weight of an...	○	○

PS2 - Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.

PS2 (K-4) SAE -4 Given a specific example or illustration (e.g., simple closed circuit, rubbing hands together), predict the observable effects of energy (i.e., light bulb lights, a bell rings, hands warm up (e.g., a test item might ask, "what will happen when…?").

Comments

GSEs	Curriculum/ Instruction	State Assessment
PS2 (K-2)-5a investigating with the sun**…**	○	○
PS2 (K-2)-4b using the senses to experiment...	○	○
PS2 (K-2)-4c identifying the sun as a source ...	○	○
PS2 (3-4)-4a investigating observable effects...	○	○
PS2 (3-4)-4b using a variety of objects to...	○	○
PS2 (3-4)-4c describing or showing in many...	○	○
PS2 (3-4)-4d building a complete circuit...	○	○
PS2 (3-4)-4e using experimental data to ...	○	○
PS2 (3-4)-4f making observations of natural...	○	○

Question # 1: Clarity of GSE

Is the GSE articulated in a way that it is clear what is expected of classroom instruction/curriculum and state assessment? (Do I understand what learning will be assessed on the state assessment and the related curricular and/or instructional aspects?) If not, what aspect of the GLE needs further clarification? (E.g. clarify terminology, give examples, etc.)

PS2 - Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.

PS2 (K-4) SAE – 5 Use observations of light in relation to other objects/substances to describe the properties of light (can be reflected, refracted, or absorbed)			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
PS2 (K-2)-5a demonstrating when a shadow...	○	○	
PS2 (3-4)-5a explaining what occurs when...	○	○	
PS2 (3-4)-5b investigating with light sources...	○	○	

PS2 (K-4) SAE+INQ –6 Experiment, observe, or predict how heat might move from one object to another.			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
PS2 (K-2)-6a describing that the sun warms...	○	○	
PS2 (K-2)-6b showing that heat moves from...	○	○	
PS2 (3-4)-6a describing how heat moves from...	○	○	
PS2 (3-4)-6b showing that heat moves from...	○	○	

PS3 - The motion of an object is affected by forces.

PS3 (K-4)-INQ+SAE –7 Use data to predict how a change in force (greater/less) might affect the position, direction of motion, or speed of an object (e.g., ramps and balls).			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
PS3 (K-2)-7a predicting the direction an object...	○	○	
PS3 (K-2)-7b showing how pushing/pulling...	○	○	
PS3 (K-2)-7c showing that different objects...	○	○	
PS3 (3-4)-7a predicting the direction or speed...	○	○	
PS3 (3-4)-7b describing position relative to...	○	○	
PS3 (3-4)-7c investigating and describing that...	○	○	
PS3 (3-4)-7d conducting experiments to...	○	○	

PS3 (K-4) INQ+ SAE –8 Use observations of magnets in relation to other objects to describe the properties of magnetism (i.e., attract or repel certain objects or has no effect.			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
PS3 (K-2)-8a observing and sorting objects...	○	○	
PS3 (3-4)-8a using prior knowledge and...	○	○	
PS3 (3-4)-8b describing what happens when...	○	○	
PS3 (3-4)-8c exploring relative strength of ...	○	○	

Question # 2: Clarity of Grade Span Differences
Are the differences between the GSEs of adjacent grade spans clear? They should show the appropriate developmental growth as they progress K - high school.
NOTE: In some cases, no differences are articulated between the adjacent (corresponding) GSEs. This may be due to increasing difficulty in some related GSE.

PS1 - All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size or amount of substance)

PS1 (K-4) INQ –1 Collect and organize data about physical properties in order to classify objects or draw conclusions about objects and their characteristic properties (e.g., temperature, color, size, shape, weight, texture, flexibility)

GSEs	Differences are clear	Differences not clear
PS1 (K-2)-1a identifying, comparing, and...	○	○
PS1 (K-2)-1b recording observations/data...	○	○
PS1 (K-2)-1c using attributes of properties...	○	○
PS1 (3-4)-1a identifying, comparing, and...	○	○
PS1 (3-4)-1b recording and analyzing...	○	○
PS1 (3-4)-1c citing evidence (e.g., prior ...	○	○
PS1 (3-4)-1d observing physical changes...	○	○

Comments

PS1 (K-4) POC –2 Make a prediction about what might happen to the state of common materials when heated or cooled or categorize materials as solid, liquid, or gas.

GSEs	Differences are clear	Differences not clear
PS1 (K-2)-2a describing properties of solids...	○	○
PS1 (K-2)-2b identifying and comparing....	○	○
PS1 (K-2)-2c making logical predictions...	○	○
PS1 (3-4)-2a measuring the weight of objects...	○	○
PS1 (3-4)-2b using measures of weight to...	○	○
PS1 (3-4)-2c showing that the weight of an...	○	○

Comments

PS1 (K-4) SAE –3 Use measures of weight (data) to demonstrate that the whole equals the sum of its parts.

GSEs	Differences are clear	Differences not clear
PS1 (K-2)-3a exploring the concept of weight...	○	○
PS1 (3-4)-3a measuring the weight of objects...	○	○
PS1 (3-4)-3b using measures of weight to...	○	○
PS1 (3-4)-3c showing that the weight of an...	○	○

Comments

PS2 - Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.

PS2 (K-4) SAE -4 Given a specific example or illustration (e.g., simple closed circuit, rubbing hands together), predict the observable effects of energy (i.e., light bulb lights, a bell rings, hands warm up (e.g., a test item might ask, "what will happen when…?").

GSEs	Differences are clear	Differences not clear
PS2 (K-2)-4a and flashlights to describe how...	○	○
PS2 (K-2)-4b using the senses to experiment...	○	○
PS2 (K-2)-4c identifying the sun as a source ...	○	○
PS2 (3-4)-4a investigating observable effects...	○	○
PS2 (3-4)-4b using a variety of objects to...	○	○
PS2 (3-4)-4c describing or showing in many...	○	○
PS2 (3-4)-4d building a complete circuit...	○	○
PS2 (3-4)-4e using experimental data to ...	○	○
PS2 (3-4)-4f making observations of natural...	○	○

Comments

Question # 2: Clarity of Grade Span Differences
Are the differences between the GSEs of adjacent grade spans clear? They should show the appropriate developmental growth as they progress K - high school.
NOTE: In some cases, no differences are articulated between the adjacent (corresponding) GSEs. This may be due to increasing difficulty in some related GSE.

PS2 - Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.

PS2 (K-4) SAE – 5 Use observations of light in relation to other objects/substances to describe the properties of light (can be reflected, refracted, or absorbed).

GSEs	Differences are clear	Differences not clear
PS2 (K-2)-5a demonstrating when a shadow...	○	○
PS2 (3-4)-5a explaining what occurs when...	○	○
PS2 (3-4)-5b investigating with light sources...	○	○

Comments

PS2 (K-4) SAE+INQ –6 Experiment, observe, or predict how heat might move from one object to another.

GSEs	Differences are clear	Differences not clear
PS2 (K-2)-6a describing that the sun warms...	○	○
PS2 (K-2)-6b showing that heat moves from...	○	○
PS2 (3-4)-6a describing how heat moves from...	○	○
PS2 (3-42)-6b showing that heat moves from...	○	○

Comments

PS 3 - The motion of an object is affected by forces.

PS3 (K-4)-INQ+SAE –7 Use data to predict how a change in force (greater/less) might affect the position, direction of motion, or speed of an object (e.g., ramps and balls).

GSEs	Differences are clear	Differences not clear
PS3 (K-2)-7a predicting the direction an object...	○	○
PS3 (K-2)-7b showing how pushing/pulling...	○	○
PS3 (K-2)-7c showing that different objects...	○	○
PS3 (3-4)-7a predicting the direction or speed...	○	○
PS3 (3-4)-7b describing position relative to...	○	○
PS3 (3-4)-7c investigating and describing that...	○	○
PS3 (3-4)-7d conducting experiments to...	○	○

Comments

PS3 (K-4) INQ+ SAE –8 Use observations of magnets in relation to other objects to describe the properties of magnetism (i.e., attract or repel certain objects or has no effect.

GSEs	Differences are clear	Differences not clear
PS3 (K-2)-8a observing and sorting objects...	○	○
PS3 (3-4)-8a using prior knowledge and...	○	○
PS3 (3-4)-8b describing what happens when...	○	○
PS3 (3-4)-8c exploring relative strength of ...	○	○

Comments

Question 3: Expected Rigor
Is the GSE more rigorous, similar to, or less rigorous than what is presently expected in your school's science program at that grade span?

PS1 - All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size or amount of substance).

PS1 (K-4) INQ –1 Collect and organize data about physical properties in order to classify objects or draw conclusions about objects and their characteristic properties (e.g., temperature, color, size, shape, weight, texture, flexibility.)

GSEs	More Rigorous	As Rigorous	Less Rigorous
PS1 (K-2)-1a identifying, comparing, and...	○	○	○
PS1 (K-2)-1b recording observations/data...	○	○	○
PS1 (K-2)-1c using attributes of properties...	○	○	○
PS1 (3-4)-1a identifying, comparing, and...	○	○	○
PS1 (3-4)-1b recording and analyzing...	○	○	○
PS1 (3-4)-1c citing evidence (e.g., prior ...	○	○	○
PS1 (3-4)-1d observing physical changes...	○	○	○

Comments

PS1 (K-4) POC –2 Make a prediction about what might happen to the state of common materials when heated or cooled or categorize materials as solid, liquid, or gas.

GSEs	More Rigorous	As Rigorous	Less Rigorous
PS1 (K-2)-2a describing properties of solids...	○	○	○
PS1 (K-2)-2b identifying and comparing....	○	○	○
PS1 (K-2)-2c making logical predictions...	○	○	○
PS1 (3-4)-3a measuring the weight of objects...	○	○	○
PS1 (3-4)-3b using measures of weight to...	○	○	○
PS1 (3-4)-3c showing that the weight of an ...	○	○	○

Comments

PS1 (K-4) SAE –3 Use measures of weight (data) to demonstrate that the whole equals the sum of its parts.

GSEs	More Rigorous	As Rigorous	Less Rigorous
PS1 (K-2)-3a exploring the concept of weight...	○	○	○
PS1 (3-4)-3a measuring the weight of objects...	○	○	○
PS1 (3-4)-3b using measures of weight to...	○	○	○
PS1 (3-4)-3c showing that the weight of an ...	○	○	○

Comments

PS 2 - Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.

PS2 (K-4) SAE -4 Given a specific example or illustration (e.g., simple closed circuit, rubbing hands together), predict the observable effects of energy (i.e., light bulb lights, a bell rings, hands warm up (e.g., a test item might ask, "what will happen when…?"),

GSEs	More Rigorous	As Rigorous	Less Rigorous
PS2 (K-2)-4a investigating with the sun….	○	○	○
PS2 (K-2)-4b using the senses to experiment...	○	○	○
PS2 (K-2)-4c identifying the sun as a source...	○	○	○
PS2 (3-4)-4a investigating observable effects...	○	○	○
PS2 (3-4)-4b using a variety of objects to...	○	○	○
PS2 (3-4)-4c describing or showing in many...	○	○	○
PS2 (3-4)-4d building a complete circuit...	○	○	○
PS2 (3-4)-4e using experimental data to...	○	○	○
PS2 (3-4)-4f making observations of natural...	○	○	○

Comments

Question 3: Expected Rigor
Is the GSE more rigorous, similar to, or less rigorous than what is presently expected in your school's science program at that grade span?

PS2 - Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.

PS2 (K-4) SAE – 5 Use observations of light in relation to other objects/substances to describe the properties of light (can be reflected, refracted, or absorbed).

GSEs	More Rigorous	As Rigorous	Less Rigorous
PS2 (K-2)-5a demonstrating when a shadow...	○	○	○
PS2 (3-4)-5a explaining what occurs when...	○	○	○
PS2 (3-4)-5b investigating with light sources...	○	○	○

Comments

PS2 (K-4) SAE+INQ –6 Experiment, observe, or predict how heat might move from one object to another.

GSEs	More Rigorous	As Rigorous	Less Rigorous
PS2 (K-2)-6a describing that the sun warms...	○	○	○
PS2 (K-2)-6b showing that heat moves from...	○	○	○
PS2 (3-4)-6a describing how heat moves from...	○	○	○
PS2 (3-4)-6b showing that heat moves from...	○	○	○

Comments

PS3 - The motion of an object is affected by forces.

PS3 (K-4)-INQ+SAE –7 Use data to predict how a change in force (greater/less) might affect the position, direction of motion, or speed of an object (e.g., ramps and balls).

GSEs	More Rigorous	As Rigorous	Less Rigorous
PS3 (K-2)-7a predicting the direction an object...	○	○	○
PS3 (K-2)-7b showing how pushing/pulling...	○	○	○
PS3 (K-2)-7c showing that different objects...	○	○	○
PS3 (3-4)-7a predicting the direction or speed...	○	○	○
PS3 (3-4)-7b describing position relative to...	○	○	○
PS3 (3-4)-7c investigating and describing that...	○	○	○
PS3 (3-4)-7d conducting experiments to...	○	○	○

Comments

PS3 (K-4) INQ+ SAE –8 Use observations of magnets in relation to other objects to describe the properties of magnetism (i.e., attract or repel certain objects or has no effect.

GSEs	More Rigorous	As Rigorous	Less Rigorous
PS3 (K-2)-8a observing and sorting objects...	○	○	○
PS3 (3-4)-8a using prior knowledge and...	○	○	○
PS3 (3-4)-8b describing what happens when...	○	○	○
PS3 (3-4)-8c exploring relative strength of ...	○	○	○

Comments

Question # 4: Does the set of GSEs within each Statement of Enduring Knowledge have the potential to promote coherent instruction? First, is each individual GSE coherent with the Statement of Enduring Knowledge under which it is listed? Second, as a whole, do these GSEs articulate well-balanced coverage of the major concepts within the EK statement? How could they be improved?

Go back and review ALL the GSEs *within* the Statement of Enduring Knowledge looking at them as a "GSE set**."** Does the set of GSEs *within* this Statement of Enduring Knowledge have the potential to promote coherent instruction?

PS1 - All living and nonliving things are composed of matter having characteristic properties that distinguish one substance from another (independent of size or amount of substance)

GSEs for this EK Statement coherent as a set	
Yes ○	**No** ○

PS1 (K-4) INQ –1 Collect and organize data about physical properties in order to classify objects or draw conclusions about objects and their characteristic properties (e.g., temperature, color, size, shape, weight, texture, flexibility.)

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
PS1 (K-2)-1a identifying, comparing, and...	○	○
PS1 (K-2)-1b recording observations/data...	○	○
PS1 (K-2)-1c using attributes of properties...	○	○
PS1 (3-4)-1a identifying, comparing, and...	○	○
PS1 (3-4)-1b recording and analyzing...	○	○
PS1 (3-4)-1c citing evidence (e.g., prior ...	○	○
PS1 (3-4)-1d observing physical changes...	○	○
	○	○

Comments

PS1 (K-4) POC –2 Make a prediction about what might happen to the state of common materials when heated or cooled or categorize materials as solid, liquid, or gas.

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
PS1 (K-2)-2a describing properties of solids...	○	○
PS1 (K-2)-2b identifying and comparing....	○	○
PS1 (K-2)-2c making logical predictions...	○	○
PS1 (3-4)-3a measuring the weight of objects...	○	○
PS1 (3-4)-3b using measures of weight to...	○	○
PS1 (3-4)-3c showing that the weight of an ...	○	○

Comments

PS1 (K-4) SAE –3 Use measures of weight (data) to demonstrate that the whole equals the sum of its parts.

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
PS1 (K-2)-3a exploring the concept of weight...	○	○
PS1 (3-4)-3a measuring the weight of objects...	○	○
PS1 (3-4)-3b using measures of weight to...	○	○
PS1 (3-4)-3c showing that the weight of an ...	○	○

Comments

PS2 - Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.

GSEs for this EK Statement coherent as a set	
Yes ○	**No** ○

PS2 (K-4) SAE -4 Given a specific example or illustration (e.g., simple closed circuit, rubbing hands together), predict the observable effects of energy (i.e., light bulb lights, a bell rings, hands warm up (e.g., a test item might ask, "what will happen when…?".)

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
PS2 (K-2)-4a investigating with the sun...	○	○
PS2 (K-2)-4b using the senses to experiment...	○	○
PS2 (K-2)-4c identifying the sun as a source...	○	○
PS2 (3-4)-4a investigating observable effects...	○	○
PS2 (3-4)-4b using a variety of objects to...	○	○
PS2 (3-4)-4c describing or showing in many...	○	○
PS2 (3-4)-4d building a complete circuit...	○	○
PS2 (3-4)-4e using experimental data to...	○	○
PS2 (3-4)-4f making observations of natural...	○	○

Comments

Question # 4: Does the set of GSEs within each Statement of Enduring Knowledge have the potential to promote coherent instruction? First, is each individual GSE coherent with the Statement of Enduring Knowledge under which it is listed? Second, as a whole, do these GSEs articulate well-balanced coverage of the major concepts within the EK statement? How could they be improved?

Go back and review ALL the GSEs *within* the Statement of Enduring Knowledge looking at them as a "GSE set**."** Does the set of GSEs *within* this Statement of Enduring Knowledge have the potential to promote coherent instruction?

PS2 - Energy is necessary for change to occur in matter. Energy can be stored, transferred, and transformed, but cannot be destroyed.

GSEs for this EK Statement coherent as a set

see section above

PS2 (K-4) SAE – 5 Use observations of light in relation to other objects/substances to describe the properties of light (can be reflected, refracted, or absorbed.).

Comments

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
PS2 (K-2)-5a demonstrating when a shadow...	○	○
PS2 (3-4)-5a explaining what occurs when...	○	○
PS2 (3-4)-5b investigating with light sources...	○	○

PS2 (K-4) SAE+INQ –6 Experiment, observe, or predict how heat might move from one object to another.

Comments

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
PS2 (K-2)-6a describing that the sun warms...	○	○
PS2 (K-2)-6b showing that heat moves from...	○	○
PS2 (3-4)-6a describing how heat moves from...	○	○
PS2 (3-4)-6b showing that heat moves from...	○	○

PS3 - The motion of an object is affected by forces.

GSEs for this EK Statement coherent as a set

Yes ○ **No** ○

PS3 (K-4)-INQ+SAE –7 Use data to predict how a change in force (greater/less) might affect the position, direction of motion, or speed of an object (e.g., ramps and balls).

Comments

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
PS3 (K-2)-7a predicting the direction an object...	○	○
PS3 (K-2)-7b showing how pushing/pulling...	○	○
PS3 (K-2)-7c showing that different objects...	○	○
PS3 (3-4)-7a predicting the direction or speed...	○	○
PS3 (3-4)-7b describing position relative to...	○	○
PS3 (3-4)-7c investigating and describing that...	○	○
PS3 (3-4)-7d conducting experiments to...	○	○

PS3 (K-4) INQ+ SAE –8 Use observations of magnets in relation to other objects to describe the properties of magnetism (i.e., attract or repel certain objects or has no effect.

Comments

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
PS3 (K-2)-8a observing and sorting objects...	○	○
PS3 (3-4)-8a using prior knowledge and...	○	○
PS3 (3-4)-8b describing what happens when...	○	○
PS3 (3-4)-8c exploring relative strength of ...	○	○

Question # 1: Clarity of GSE

Is the GSE articulated in a way that it is clear what is expected of classroom instruction/curriculum and state assessment? (Do I understand what learning will be assessed on the state assessment and the related curricular and/or instructional aspects?) If not, what aspect of the GLE needs further clarification? (E.g. clarify terminology, give examples, etc.)

ESS1 - The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.

ESS1 (K-4) INQ –1 Given certain earth materials (soils, rocks or minerals) use physical properties to sort, classify, and describe them.			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
ESS1 (K-2)-1a describing, comparing, and ...	○	○	
ESS1 (K-2)-1b recording observations/data...	○	○	
ESS1 (K-2)-1c using attributes of properties...	○	○	
ESS1 (3-4)-1a describing, comparing, and...	○	○	
ESS1 (3-4)-1b recording and analyzing...	○	○	
ESS1 (3-4)-1c citing evidence (e.g., prior...	○	○	
ESS1 (3-4)-1d identifying the four basic...	○	○	

ESS1 (K-4) INQ –2 Use results from an experiment to draw conclusions about how water interacts with earth materials (e.g., percolation, erosion, frost heaves)			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
ESS1 (K-2)-2a conducting tests on how...	○	○	
ESS1 (K-2)-2a conducting investigations and…	○	○	

ESS 1 (K-4) NOS –3 Explain how the use of scientific tools helps to extend senses and gather data about weather. (i.e., weather/wind vane: direction; wind sock: wind intensity; anemometer: speed; thermometer: temperature; meter sticks/rulers: snow depth; rain gauges: rain amount in inches).			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
ESS1 (K-2)-3a using scientific tools to...	○	○	
ESS1 (3-4)-3a explaining how the use of...	○	○	
ESS1 (3-4)-3b selecting appropriate tools…	○	○	

ESS1 (K-4) INQ+SAE –4 Explain how wind, water, or ice shape and reshape the earth			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
ESS1 (K-2)-4a observing and recording...	○	○	
ESS1 (3-4)-4a investigating local landforms ...	○	○	
ESS1 (3-4)-4b using or building models to...	○	○	
ESS1 (3-4)-4c identifying sudden and gradual...	○	○	

ESS1 (K-4) POC –5 Based on data collected from daily weather observations, describe weather changes or weather patterns.			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
ESS1 (K-2)-5a observing, recording, and...	○	○	
ESS1 (K-2)-5b observe how clouds are related...	○	○	
ESS1 (3-4)-5a observing, recording, comparing...	○	○	
ESS1 (3-4)-5b describing water as it changes...	○	○	
ESS1 (3-4)-5c explaining how this cycle of...	○	○	

Question # 1: Clarity of GSE

Is the GSE articulated in a way that it is clear what is expected of classroom instruction/curriculum and state assessment? (Do I understand what learning will be assessed on the state assessment and the related curricular and/or instructional aspects?) If not, what aspect of the GLE needs further clarification? (E.g. clarify terminology, give examples, etc.)

ESS1 - The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.

ESS1 (K-4) FAF -6 Given information about earth materials explain how their characteristics lend themselves to specific uses			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
ESS1 (K-2)-6a Identifying which materials...	○	○	
ESS1 (3-4)-6a Determining and supporting...	○	○	

ESS2 - The earth is part of a solar system, made up of distinct parts that have temporal and spatial interrelationships.

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
ESS2 (K-2)-7a observing that the sun can only…	○	○	
ESS2 (K-2)-7b observing that the sun and moon…	○	○	
ESS2 (K-2)-7c observing that the moon looks…	○	○	
ESS2 (3-4)-7a observing that the sun, moon,…	○	○	
ESS2 (3-4)-7b observing that the moon looks…	○	○	
ESS2 (3-4)-7c recognizing that the rotation…	○	○	

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
ESS2 (3-4)-8a recognizing that: the sun is the…	○	○	
ESS2 (3-4)-8b recognizing that it takes…	○	○	

ESS3 - The origin and evolution of galaxies and the universe demonstrate fundamental principles of physical science across vast distances and time.

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.			**Comments**
GSEs	**Curriculum/ Instruction**	**State Assessment**	
ESS3 (K-2)-9a observing that there are more…	○	○	
ESS3 (3-4)-9a recognizing that throughout….	○	○	

Question # 2: Clarity of Grade Span Differences
Are the differences between the GSEs of adjacent grade spans clear? They should show the appropriate developmental growth as they progress K - high school.
NOTE: In some cases, no differences are articulated between the adjacent (corresponding) GSEs. This may be due to increasing difficulty in some related GSE.

ESS1 - The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.

ESS1 (K-4) INQ –1 Given certain earth materials (soils, rocks or minerals) use physical properties to sort, classify, and describe them.

GSEs	Differences are clear	Differences not clear
ESS1 (K-2)-1a describing, comparing, and ...	○	○
ESS1 (K-2)-1b recording observations/data...	○	○
ESS1 (K-2)-1c using attributes of properties...	○	○
ESS1 (3-4)-1a describing, comparing, and...	○	○
ESS1 (3-4)-1b recording and analyzing...	○	○
ESS1 (3-4)-1c citing evidence (e.g., prior...	○	○
ESS1 (3-4)-1d identifying the four basic...	○	○

Comments

ESS1 (K-4) INQ –2 Use results from an experiment to draw conclusions about how water interacts with earth materials (e.g., percolation, erosion, frost heaves).

GSEs	Differences are clear	Differences not clear
ESS1 (K-2)-2a conducting tests on how...	○	○
ESS1 (K-2)-2a conducting investigations and...	○	○

Comments

ESS 1 (K-4) NOS –3 Explain how the use of scientific tools helps to extend senses and gather data about weather. (i.e., weather/wind vane: direction; wind sock: wind intensity; anemometer: speed; thermometer: temperature; meter sticks/rulers: snow depth; rain gauges: rain amount in inches).

GSEs	Differences are clear	Differences not clear
ESS1 (K-2)-3a using scientific tools to...	○	○
ESS1 (3-4)-3a explaining how the use of...	○	○
ESS1 (3-4)-3b selecting appropriate tools…	○	○

Comments

ESS1 (K-4) INQ+SAE –4 Explain how wind, water, or ice shape and reshape the earth.

GSEs	Differences are clear	Differences not clear
ESS1 (K-2)-4a observing and recording...	○	○
ESS1 (3-4)-4a investigating local landforms ...	○	○
ESS1 (3-4)-4b using or building models to...	○	○
ESS1 (3-4)-4c identifying sudden and gradual...	○	○

Comments

ESS1 (K-4) POC –5 Based on data collected from daily weather observations, describe weather changes or weather patterns.

GSEs	Differences are clear	Differences not clear
ESS1 (K-2)-5a observing, recording, and...	○	○
ESS1 (K-2)-5b observe how clouds are related...	○	○
ESS1 (3-4)-5a observing, recording, comparing...	○	○
ESS1 (3-4)-5b describing water as it changes...	○	○
ESS1 (3-4)-5c explaining how this cycle of ...	○	○

Comments

Question # 2: Clarity of Grade Span Differences

Are the differences between the GSEs of adjacent grade spans clear? They should show the appropriate developmental growth as they progress K - high school.

NOTE: In some cases, no differences are articulated between the adjacent (corresponding) GSEs. This may be due to increasing difficulty in some related GSE.

ESS1 - The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.

ESS1 (K-4) FAF -6 Given information about earth materials explain how their characteristics lend themselves to specific uses.			**Comments**
GSEs	**Differences are clear**	**Differences not clear**	
ESS1 (K-2)-6a identifying which materials...	○	○	
ESS1 (3-4)-6a determining and supporting...	○	○	

ESS2 - The earth is part of a solar system, made up of distinct parts that have temporal and spatial interrelationships.

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only			**Comments**
GSEs	**Differences are clear**	**Differences not clear**	
ESS2 (K-2)-7a observing that the sun can only…	○	○	
ESS2 (K-2)-7b observing that the sun and moon…	○	○	
ESS2 (K-2)-7c observing that the moon looks…	○	○	
ESS2 (3-4)-7a observing that the sun, moon,…	○	○	
ESS2 (3-4)-7b observing that the moon looks…	○	○	
ESS2 (3-4)-7c recognizing that the rotation…	○	○	

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.			**Comments**
GSEs	**Differences are clear**	**Differences not clear**	
ESS2 (3-4)-8a recognizing that: the sun is the…	○	○	
ESS2 (3-4)-8b recognizing that it takes…	○	○	

ESS3 - The origin and evolution of galaxies and the universe demonstrate fundamental principles of physical science across vast distances and time.

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.			**Comments**
GSEs	**Differences are clear**	**Differences not clear**	
ESS3 (K-2)-9a observing that there are more…	○	○	
ESS3 (3-4)-9a recognizing that throughout….	○	○	

Question 3: Expected Rigor

Is the GSE more rigorous, similar to, or less rigorous than what is presently expected in your school's science program at that grade span?

ESS1 - The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.

ESS1 (K-4) INQ –1 Given certain earth materials (soils, rocks or minerals) use physical properties to sort, classify, and describe them.

GSEs	More Rigorous	As Rigorous	Less Rigorous	Comments
ESS1 (K-2)-1a describing, comparing, and ...	○	○	○	
ESS1 (K-2)-1b recording observations/data...	○	○	○	
ESS1 (K-2)-1c using attributes of properties...	○	○	○	
ESS1 (3-4)-1a describing, comparing, and...	○	○	○	
ESS1 (3-4)-1b recording and analyzing...	○	○	○	
ESS1 (3-4)-1c citing evidence (e.g., prior...	○	○	○	
ESS1 (3-4)-1d identifying the four basic...	○	○	○	

ESS1 (K-4) INQ –2 Use results from an experiment to draw conclusions about how water interacts with earth materials (e.g., percolation, erosion, frost heave.).

GSEs	More Rigorous	As Rigorous	Less Rigorous	Comments
ESS1 (K-2)-2a conducting tests on how...	○	○	○	
ESS1 (K-2)-2a conducting investigations and...	○	○	○	

ESS 1 (K-4) NOS –3 Explain how the use of scientific tools helps to extend senses and gather data about weather. (i.e., weather/wind vane: direction; wind sock: wind intensity; anemometer: speed; thermometer: temperature; meter sticks/rulers: snow depth; rain gauges: rain amount in inches).

GSEs	More Rigorous	As Rigorous	Less Rigorous	Comments
ESS1 (K-2)-3a using scientific tools to...	○	○	○	
ESS1 (3-4)-3a explaining how the use of...	○	○	○	
ESS1 (3-4)-3b selecting appropriate tools…	○	○	○	

ESS1 (K-4) INQ+SAE –4 Explain how wind, water, or ice shape and reshape the earth.

GSEs	More Rigorous	As Rigorous	Less Rigorous	Comments
ESS1 (K-2)-4a observing and recording...	○	○	○	
ESS1 (3-4)-4a investigating local landforms ...	○	○	○	
ESS1 (3-4)-4b using or building models to...	○	○	○	
ESS1 (3-4)-4c identifying sudden and gradual...	○	○	○	

ESS1 (K-4) POC –5 Based on data collected from daily weather observations, describe weather changes or weather patterns.

GSEs	More Rigorous	As Rigorous	Less Rigorous	Comments
ESS1 (K-2)-5a observing, recording, and...	○	○	○	
ESS1 (K-2)-5b observe how clouds are related...	○	○	○	
ESS1 (3-4)-5a observing, recording, comparing...	○	○	○	
ESS1 (3-4)-5b describing water as it changes...	○	○	○	
ESS1 (3-4)-5c explaining how this cycle of...	○	○	○	

Question 3: Expected Rigor

Is the GSE more rigorous, similar to, or less rigorous than what is presently expected in your school's science program at that grade span?

ESS1 - The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.

ESS1 (K-4) FAF -6 Given information about earth materials explain how their characteristics lend themselves to specific uses				Comments
GSEs	**More Rigorous**	**As Rigorous**	**Less Rigorous**	
ESS1 (K-2)-6a identifying which materials...	○	○	○	
ESS1 (3-4)-6a determining and supporting...	○	○	○	

ESS2 - The earth is part of a solar system, made up of distinct parts that have temporal and spatial interrelationships.

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.				Comments
GSEs	**More Rigorous**	**As Rigorous**	**Less Rigorous**	
ESS2 (K-2)-7a observing that the sun can only…	○	○	○	
ESS2 (K-2)-7b observing that the sun and moon…	○	○	○	
ESS2 (K-2)-7c observing that the moon looks…	○	○	○	
ESS2 (3-4)-7a observing that the sun, moon,…	○	○	○	
ESS2 (3-4)-7b observing that the moon looks…	○	○	○	
ESS2 (3-4)-7c recognizing that the rotation…	○	○	○	

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.				Comments
GSEs	**More Rigorous**	**As Rigorous**	**Less Rigorous**	
ESS2 (3-4)-8a recognizing that: the sun is the…	○	○	○	
ESS2 (3-4)-8b recognizing that it takes…	○	○	○	

ESS3 The origin and evolution of galaxies and the universe demonstrate fundamental principles of physical science across vast distances and time.

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.				Comments
GSEs	**More Rigorous**	**As Rigorous**	**Less Rigorous**	
ESS3 (K-2)-9a observing that there are more…	○	○	○	
ESS3 (3-4)-9a recognizing that throughout….	○	○	○	

Question # 4: Does the set of GSEs within each Statement of Enduring Knowledge have the potential to promote coherent instruction? First, is each individual GSE coherent with the Statement of Enduring Knowledge under which it is listed? Second, as a whole, do these GSEs articulate well-balanced coverage of the major concepts within the EK statement? How could they be improved?

Go back and review ALL the GSEs *within* the Statement of Enduring Knowledge looking at them as a "GSE set**."** Does the set of GSEs *within* this Statement of Enduring Knowledge have the potential to promote coherent instruction?

ESS1 - The earth and earth materials as we know them today have developed over long periods of time, through continual change processes.	**GSEs for this EK Statement coherent as a set**	
	Yes ○	**No** ○

ESS1 (K-4) INQ –1 Given certain earth materials (soils, rocks or minerals) use physical properties to sort, classify, and describe them.

Comments

GSEs	**Individual coherence with the Statement of Enduring Knowledge**	
	Yes	**No**
ESS1 (K-2)-1a describing, comparing, and ...	○	○
ESS1 (K-2)-1b recording observations/data...	○	○
ESS1 (K-2)-1c using attributes of properties...	○	○
ESS1 (3-4)-1a describing, comparing, and...	○	○
ESS1 (3-4)-1b recording and analyzing...	○	○
ESS1 (3-4)-1c citing evidence (e.g., prior...	○	○
ESS1 (3-4)-1d Identifying the four basic...	○	○

ESS1 (K-4) INQ –2 Use results from an experiment to draw conclusions about how water interacts with earth materials (e.g., percolation, erosion, frost heaves)

Comments

GSEs	**Individual coherence with the Statement of Enduring Knowledge**	
	Yes	**No**
ESS1 (K-2)-2a conducting tests on how...	○	○
ESS1 (K-2)-2a conducting investigations and**...**	○	○

ESS 1 (K-4) NOS –3 Explain how the use of scientific tools helps to extend senses and gather data about weather. (i.e., weather/wind vane: direction; wind sock: wind intensity; anemometer: speed; thermometer: temperature; meter sticks/rulers: snow depth; rain gauges: rain amount in inches)

Comments

GSEs	**Individual coherence with the Statement of Enduring Knowledge**	
	Yes	**No**
ESS1 (K-2)-3a using scientific tools to...	○	○
ESS1 (3-4)- 3a explaining how the use of...	○	○
ESS1 (3-4)-3b selecting appropriate tools…	○	○

ESS1 (K-4) INQ+SAE –4 Explain how wind, water, or ice shape and reshape the earth

Comments

GSEs	**Individual coherence with the Statement of Enduring Knowledge**	
	Yes	**No**
ESS1 (K-2)-4a observing and recording...	○	○
ESS1 (3-4)-4a investigating local landforms...	○	○
ESS1 (3-4)-4b using or building models to...	○	○
ESS1 (3-4)-4c identifying sudden and gradual...	○	○

ESS1 (K-4) POC –5 Based on data collected from daily weather observations, describe weather changes or weather patterns

Comments

GSEs	**Individual coherence with the Statement of Enduring Knowledge**	
	Yes	**No**
ESS1 (K-2)-5a observing, recording, and ...	○	○
ESS1 (K-2)-5b observe how clouds are related...	○	○
ESS1 (3-4)-5a observing, recording, comparing...	○	○
ESS1 (3-4)-5b describing water as it changes...	○	○
ESS1 (3-4)-5c explaining how this cycle of...	○	○

ESS1 (K-4) FAF -6 Given information about earth materials explain how their characteristics lend themselves to specific uses

Comments

GSEs	**Individual coherence with the Statement of Enduring Knowledge**	
	Yes	**No**
ESS1 (K-2)-6a identifying which materials...	○	○
ESS1 (3-4)-6a determining and supporting	○	○

Question # 4: Does the set of GSEs within each Statement of Enduring Knowledge have the potential to promote coherent instruction? First, is each individual GSE coherent with the Statement of Enduring Knowledge under which it is listed? Second, as a whole, do these GSEs articulate well-balanced coverage of the major concepts within the EK statement? How could they be improved?

Go back and review ALL the GSEs *within* the Statement of Enduring Knowledge looking at them as a "GSE set**."** Does the set of GSEs *within* this Statement of Enduring Knowledge have the potential to promote coherent instruction?

ESS2 – The earth is part of a solar system, made up of distinct parts that have temporal and spatial interrelationships.

GSEs for this EK Statement coherent as a set	
Yes ○	**No** ○

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
ESS2 (K-2)-7a observing that the sun can only…	○	○
ESS2 (K-2)-7b observing that the sun and moon…	○	○
ESS2 (K-2)-7c observing that the moon looks…	○	○
ESS2 (3-4)-7a observing that the sun, moon …	○	○
ESS2 (3-4)-7b observing that the moon looks…	○	○
ESS2 (3-4)-7c recognizing that the rotation…	○	○

Comments

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
ESS2 (3-4)-8a recognizing that: the sun is the…	○	○
ESS2 (3-4)-8b recognizing that it takes…	○	○

Comments

ESS3 - The origin and evolution of galaxies and the universe demonstrate fundamental principles of physical science across vast distances and time.

GSEs for this EK Statement coherent as a set	
Yes ○	**No** ○

There are no ESS2 State Assessment Targets at this Grade Span. The GSEs listed below are assessed at the local level only.

GSEs	Individual coherence with the Statement of Enduring Knowledge	
	Yes	**No**
ESS3 (K-2)-9a observing that there are more…	○	○
ESS3 (3-4)-9a recognizing that throughout….	○	○

Comments

Question #5: What science content (important concepts) is missing in these draft science GSEs? Where are there gaps in content? This information is most essential for developing the science GSEs for local curriculum, instruction and assessment.	
Relevant EK **(Identify by domain and number - ex. LS1)**	**Content/Concepts Needing Inclusion** **(Please provide as much detail as possible)**

Appendix A: GSE Development in Science

Givens:

- GSEs in science are developed in grade spans K-2, 3-4, 5-6, 7-8 and high school.
- High school science GSEs for all students cover the content and skills eligible for the large-scale assessment given at the end of Grade 11.
- Examples of "Extensions" to the high school science GSEs are provided to guide the more in depth study of particular topic and for local curriculum and assessment
- The science GSEs are for state assessment and local curriculum and assessment purposes.
- The science GSEs are aligned with, but not necessarily limited by, existing state frameworks.

Purpose of GSE: The science GSEs are specified for a common, large-scale, state level assessment, and some are identified for local curriculum and assessment option.

Definition of a GSE: A science GSE is a stated objective that is aligned with the Rhode Island science framework and the national science standards, by grade span. A GSE differentiates performance on concepts, skills, or content knowledge between adjacent grade levels and spans, and as a set, leads to focused, coherent, and developmentally appropriate instruction without narrowing the curriculum

Criteria for the Development of GSEs:

1) GSEs in science **must** relate to national science standards, but not be limited by them.

2) GSEs should maintain a balance between a generalizable skill, concept, or piece of knowledge, **and** enough specificity to differentiate skill, concept, or knowledge between adjacent grades, to make it clear to teachers what is to be taught and learned, ***without being so specific that it narrows the curriculum.***

3) GSEs should explicitly indicate cognitive demand (interaction of content and process). There should be a mix of cognitive demands at all grade levels, not an assumption that students in lower grades do less cognitively demanding work. (The verbs used in the construction of the science GSEs are consistent with the Webb's Depth of Knowledge (DOK) levels. Most science GSEs are written at DOK levels 2 and 3) see TABLE 1

4) GSEs should be specific and clear enough to know how they will be assessed.

5) GSEs should contain language that describes expected performance so that a student's achievement in relation to the GSE can be validly assessed for state assessment purposes.

    a. **Not assessable** – E.g., "Students demonstrate an understanding of characteristic properties of matter."

    b. **Assessable** – E.g., Students demonstrate an understanding of characteristic properties of matter by citing evidence (e.g., prior knowledge, data) to support conclusions about why objects are grouped/not grouped together

Criteria for the Development of a *SET* of Grade Span Expectation in Science

- The set of GSEs should be of comparable grain size.
- Concepts, skills, and knowledge should be differentiated between adjacent grade spans.
- The set of GSEs within a domain of science (Life Science, Physical Science, Earth and Space Science) and the Statement of Enduring Knowledge reflects the relative importance as defined by a review of national and state science standards.
- The set of GSEs should promote coherent, focused, developmentally appropriate instruction, as opposed to isolated instruction *just* on topics, facts, or individual skills that need to be covered.
- The set of GSEs should be reasonable to learn adequately (assuming prior learning).
- The set of GSEs should be constructed as a continuum of learning. Success in one grade span should be a good predictor of success in the following year.
- Success on GSEs across multiple years should be a good predictor of performance at the national benchmark years. (i.e., NAEP).

TABLE 1 Sample Descriptors for each of the DOK Levels in Science, based on Webb
(working draft K. Hess, updated September 2005)

Level 1 **Recall & Reproduction**	**Level 2** **Skills & Concepts**	**Level 3** **Strategic Thinking**	**Level 4** **Extended Thinking**
a. Recall or recognize a fact, term, definition, simple procedure (such as one step), or property b. Demonstrate a rote response c. Use a well-known formula d. Represent in words or diagrams a scientific concept or relationship e. Provide or recognize a standard scientific representation for simple phenomenon f. Perform a routine procedure, such as measuring length g. Perform a **simple** science process or a set procedure (like a recipe) h. Perform a clearly defined set of steps i. Identify, calculate, or measure	a. Specify and explain the relationship between facts, terms, properties, or variables b. Describe and explain examples and non-examples of science concepts c. Select a procedure according to specified criteria and perform it d. Formulate a routine problem given data and conditions e. Organize, represent, and compare data f. Make a decision as to how to approach the problem g. Classify, organize, or estimate h. Compare data i. Make observations j. Interpret information from a simple graph k. Collect and display data	a. Interpret information from a complex graph (such as determining features of the graph or aggregating data in the graph) b. Use reasoning, planning, and evidence c. Explain thinking (beyond a simple explanation or using only a word or two to respond) d. Justify a response e. Identify research questions and design investigations for a scientific problem f. Use concepts to solve non-routine problems/more than one possible answer g. Develop a scientific model for a complex situation h. Form conclusions from experimental or observational data i. Complete a multi-step problem that involves planning and reasoning j. Provide an explanation of a principle k. Justify a response when more than one answer is possible l. Cite evidence and develop a logical argument for concepts m. Conduct a designed investigation n. Research and explain a scientific concept o. Explain phenomena in terms of concepts	a. Select or devise approach among many alternatives to solve problem b. Based on provided data from a complex experiment that is novel to the student, deduct the fundamental relationship between several controlled variables. c. Conduct an investigation, from specifying a problem to designing and carrying out an experiment, to analyzing its data and forming conclusions d. Relate ideas *within* the content area or *among* content areas e. Develop generalizations of the results obtained and the strategies used and apply them to new problem situations
NOTE: If the knowledge necessary to answer an item automatically provides the answer, it is a Level 1.	**NOTE: If the knowledge necessary to answer an item <u>does not</u> automatically provide the answer, then the item is at least a Level 2. Most actions imply more than one step.** **NOTE: Level 3 is complex and abstract. If more than one response is possible, it is at least a Level 3 and calls for use of reasoning, justification, evidence, as support for the response.**		**NOTE: Level 4 activities often require an extended period of time for carrying out multiple steps; however, time alone is not a distinguishing factor if skills and concepts are simply repetitive over time.**